ACURA

TABLE OF OFFSETS FOR SIDE BLOCKS AND BILGE KEEL "A" DOCKING POSITION – AFTER SIDE NO. 1 BLOCK 83'–4" FROM STERN REF POINT

SIDE OF SHIP & BLK NO.	FWD OF STERN REF POINT	POINT "A" HALF BREADTH	POINT "A" HEIGHT	POINT "B" HALF BREADTH	POINT "B" HEIGHT	POINT "C" HALF BREADTH	POINT "C" HEIGHT	BEVELING IN 18" FOR A B C	BILGE KEEL DIM "D"	BILGE KEEL DIM "E"
P S 1	83'–4"	6'–6"	0–9–2	5'–3"	0–7–1	7'–9"	0–11–3	0"	–	–
			0–9–2		0–7–1		0–11–3		–	–
P S 2	91'–4"	6'–6"	0–9–2	5'–3"	0–7–1	7'–9"	0–11–3	0"	–	–
			0–9–2		0–7–1		0–11–3		–	–
P S 3	99'–4"	6'–6"	0–9–2	5'–3"	0–7–1	7'–9"	0–11–3	0"	–	–
			0–9–2		0–7–1		0–11–3		–	–
P S 4	107'–4"	6'–6"	0–9–2	5'–3"	0–7–1	7'–9"	0–11–3	0"	–	–
			0–9–2		0–7–1		0–11–3		–	–
P S 5	115'–4"	8'–0"	0–11–7	6'–9"	0–9–7	9'–3"	1–1–7	0"	–	–
			0–11–7		0–9–7		1–1–7		–	–
P S 6	123'–4"	8'–2"	1–0–3	6'–11"	0–9–14	9'–5"	1–1–11	0"	–	–
			1–0–3		0–9–14		1–1–11		–	–
P S 7	131'–4"	8'–2"	1–0–12	6'–11"	0–10–12	9'–5"	1–2–11	3/16"	–	–
			1–0–12		0–10–12		1–2–11		–	–

TABLE OF OFFSETS FOR SIDE BLOCKS AND BILGE KEEL "B" DOCKING POSITION – AFTER SIDE NO. 1 BLOCK 86'–4" FROM STERN REF POINT

SIDE OF SHIP & BLK NO.	FWD OF STERN REF POINT	POINT "A" HALF BREADTH	POINT "A" HEIGHT	POINT "B" HALF BREADTH	POINT "B" HEIGHT	POINT "C" HALF BREADTH	POINT "C" HEIGHT	BEVELING IN 18" FOR A B C	BILGE KEEL DIM "D"	BILGE KEEL DIM "E"
P S 1	86'–4"	6'–6"	0–9–2	5'–3"	0–7–1	7'–9"	0–11–3	0"	–	–
			0–9–2		0–7–1		0–11–3		–	–
P S 2	94'–4"	6'–6"	0–9–2	5'–3"	0–7–1	7'–9"	0–11–3	0"	–	–
			0–9–2		0–7–1		0–11–3		–	–
P S 3	102'–4"	6'–6"	0–9–2	5'–3"	0–7–1	7'–9"	0–11–3	0"	–	–
			0–9–2		0–7–1		0–11–3		–	–
P S 4	110'–4"	6'–6"	0–9–2	5'–3"	0–7–1	7'–9"	0–11–3	0"	–	–
			0–9–2		0–7–1		0–11–3		–	–
P S 5	118–4"	8'–2"	0–11–9	6'–11"	0–9–9	9'–5"	1–1–9	0"	–	–
			0–11–9		0–9–9		1–1–9		–	–
P S 6	126'–4"	8'–2"	1–0–3	6'–11"	0–9–14	9'–5"	1–1–11	0"	–	–
			1–0–3		0–9–14		1–1–11		–	–
P S 7	134'–4"	8'–2"	1–1–2	6'–11"	0–11–2	9'–5"	1–3–1	1/4"	–	–
			1–1–2		0–11–2		1–3–1		–	–

TABLE OF DISPLACEMENT & OTHER PROPERTIES FOR DOCKING
NO CORRECTION FOR TRIM

MEAN DRAFT (FEET)	△ (LT) S.W.	KM (FEET)	LCB REF FP (FEET)	LCB REF SRP (FEET)	LCF REF FP (FEET)	LCF REF SRP (FEET)	MT1" (FT–LT/IN)	TPI (LT/IN)
11.50	1,528	22.28	98.58	108.42	104.18	102.82	179.3	15.79
12.00	1,627	22.20	99.04	107.96	105.58	101.42	192.0	16.20
12.50	1,726	22.12	99.46	107.54	107.04	99.96	205.9	16.64
13.00	1,829	22.00	99.92	107.08	108.50	98.50	219.8	17.03
13.50	1,931	21.86	100.42	106.58	109.62	97.38	231.1	17.33
14.00	2,037	21.68	100.90	106.10	110.06	96.94	237.6	17.52
14.50	2,143	21.52	101.38	105.62	110.57	96.43	244.2	17.70
15.00	2,250	21.42	101.82	105.18	111.13	95.87	251.9	17.90
15.50	2,358	21.30	102.26	104.74	111.52	95.48	258.5	18.05
16.00	2,467	21.18	102.68	104.32	111.76	95.24	263.7	18.18

TABLE OF OFFSETS FOR ADDITIONAL SIDE BLOCKS "A" AND "B" DOCKING POSITION SEE GENERAL NOTE 3.K

SIDE OF SHIP & BLK NO.	FWD OF STERN REF POINT	POINT "B" HALF BREADTH	POINT "B" HEIGHT	POINT "C" HALF BREADTH	POINT "C" HEIGHT	BEVELING IN 18"
P S 8A	66'–8"	15'–10"	2–10–4	19'–10"	3–6–0	–1½"
			2–10–4		3–6–0	
P S 8B	88'–6"	15'–0"	1–11–4	19'–0"	2–6–3	–
			1–11–4		2–6–3	
P S 9B	139'–0"	15'–0"	2–4–7+	19'–0"	3–1–2	5/8"
			2–4–7+		3–1–2	
P S 9A	145'–4"	14'–7"	2–8–2	18'–7"	3–6–2	1¼"
			2–8–2		3–6–2	

DRAFT MARK CORRECTIONS

DRAFT MARK	AFT DRAFT PORT	AFT DRAFT STBD	MID DRAFT PORT	MID DRAFT STBD	FWD DRAFT PORT	FWD DRAFT STBD
11	–	–	–1 3/16"	–1 1/16"	–	–
12	–	–	–1 3/16"	–1 1/16"	–2 11/16"	–3 13/16"
13	–	–	–1 3/16"	–1 1/16"	–	–
14	–	–	–1 3/16"	–1 1/16"	–2 5/8"	–4"
15	–	–	–1 3/16"	–1 1/16"	–	–
16	–3/4"	–1/2"	–1 3/16"	–1 1/16"	–	–
17	–9/16"	–1/2"	–1 3/16"	–1 1/16"	–	–
18	–3/4"	–1/2"	–1 3/16"	–1 1/16"	–	–

LIST OF ALL ITEMS AND OPENINGS IN SHELL BELOW 18' WL

NO.	SERVICE	SIZE OF OPENING IN SHELL	SIDE OF SHIP	DIST FWD	DIST AFT	FR NEAR CTR	FWD OF STERN REF POINT	HGT ABV KEEL TO ℄ OF OPENING	DISTANCE OFF ℄ SHIP
1	S.W. DISCH MCHRY COOLING	4" DIA	P	6'–5"	—	39	145'–5"	16'–10"	20'–9"
2	SEWAGE OVBD DISCH	4" DIA	S	—	32"	39	136'–4"	15'–0"	21'–0"
3	BILGE & BALLAST OVBD DISCH	6" DIA	P	—	6"	44	128'–6"	15'–6"	21'–0"
4	S.W. DISCH MCHRY COOLING	8" DIA	P	—	35.75"	45	124'–3/4"	17'–6"	21'–0"
5	S.W. DISCH MCHRY COOLING	8" DIA	P	—	9"	60	96'–3"	15'–8"	21'–0"
6	BILGE & BALLAST OVBD DISCH	6" DIA	P	8"	—	63	91'–8"	17'–0"	21'–0"
7	S.W. DISCH MCHRY COOLING	4" DIA	P	12"	—	70	78'–0"	15'–6"	21'–0"
8	SPEED LOG	2–3/8" DIA	S	3"	—	19	179'–3"	0'–0"	6"
9	TRANSDUCER	6" DIA	S	10"	—	30	157'–10"	0'–0"	12"
10	TRANSDUCER	10–3/4" DIA	CL	10"	—	34	149–10"	0'–0"	0'–0"
11	OPENING TO SEACHEST	40" X 48"	P/S	—	—	54	109'–0"	22–7/16"	12'–6"
12	DOCKING PLUG (PK TK)	1–1/2" DIA	S	6"	—	11	195'–6"	40"	13–1/2"
13	DOCKING PLUG (SWB 1&2)	1–1/2" DIA	P/S	4"	—	29	159'–4"	1"	16"
14	DOCKING PLUG (SWB 4&5)	1–1/2" DIA	P/S	4"	—	39	139'–4"	19"	8'–8"
15	DOCKING PLUG (SWB 3)	1–1/2" DIA	S	4"	—	39	139'–4"	0'–0"	6"
16	DOCKING PLUG (D.O. 1)	1–1/2" DIA	S	—	2"	48	121'–10"	0'–0"	6"
17	DOCKING PLUG (OIL COLL)	1–1/2" DIA	S	10"	—	66	85'–10"	0'–0"	6"
18	DOCKING PLUG (BLO DB BTM)	1–1/2" DIA	P/S	4"	—	69	79'–4"	9–1/2"	6'–0"
19	DOCKING PLUG (D.O. 7&8)	1–1/2" DIA	P/S	—	8"	75	66'–4"	26"	11'–0"
20	DOCKING PLUG (SRV TK)	1–1/2" DIA	S	—	8"	75	66'–4"	6"	6"
21	DOCKING PLUG (D.O. 6)	1–1/2" DIA	P	—	8"	77	62'–4"	14"	18"
22	DOCKING PLUG (SWB 6)	1–1/2" DIA	P/S	—	8"	91	34'–4"	7'–7"	18"
23	DOCKING PLUG (SWB 8)	1–1/2" DIA	S	—	8"	104	8'–4"	17'–1/2"	6"
24	DOCKING PLUG (D.O.2&3)	1–1/2" DIA	P/S	4"	—	53	111'–4"	8"	7'–0–1/4"
25	DOCKING PLUG (SKEG)	1–1/2" DIA	S	—	8"	98	20'–4"	10'–1/2"	7"
26	DOCKING PLUG (SKEG)	1–1/2" DIA	S	—	8"	77	62'–4"	0'–0"	6"
27	DOCKING PLUG (D.O. 4&5)	1–1/2" DIA	P/S	4"	—	69	79'–4"	11–1/2"	7'–0"
28	3/4" RAISED BLANK	4" DIA	P/S	—	4"	71	74'–8"	6"	5'–3"
29	BOW THRUSTER TUNNEL	10'–6" X 5'–8"	P/S	—	1"	16	184'–11"	5'– 0"	34–1/2"
30	ANODE	6" DIA	P/S	10"	—	24	167'–10"	4'–6"	6'–10"
31	ANODE	6" DIA	P/S	4"	—	93	32'–4"	10'–0"	13'–8"
32	ELECTRODE	6" DIA	S	—	12"	75	66'–0"	5'–0"	8'–6"
33	ELECTRODE	6" DIA	P	—	12"	103	10'–0"	12'–0"	6'–6"

BEARING ON BLOCKS

SUPPORT	BEARING AREA ON SHELL PLATE	
19 KEEL BLOCKS 30" X 24" 5.00 SQ FT	95.0 SQ FT	13,680 SQ IN
14 SIDE BLOCKS 18" X 30" 3.75 SQ FT	52.50 SQ FT	7560 SQ IN
KEEL BLOCK BEARING PER SQ FT (SEE NOTE 3-B)	18.98 TONS	
KEEL BLOCK BEARING PER SQ IN (SEE NOTE 3-B)		295.23 LB
BILGE BLOCK BEARING PER SQ FT (SEE NOTE 3-C)	41.81 TONS	
BILGE BLOCK BEARING PER SQ IN (SEE NOTE 3-C)		650.32 LB
DOCKING DRAFT 12.87 FT DISPLACEMENT – 1,803 TONS		4,038,720 LB
WIND & RESIDUAL HEEL REACTION – 292.73 TONS		655,704 LB

NOTE: KEEL BLOCK BEARING PRESSURE IS BASED ON DOCKING POSITION "B". DOCKING POSITION "A" KEEL BLOCK BEARING PRESSURE IS SLIGHTLY LOWER.

DOCKING POSITION	FIRST KEEL BLOCK FROM SRP	FIRST SIDE BLOCK FROM SRP
DOCKING POSITION "A"	27'–4"	83'–4"
DOCKING POSITION "B"	30'–4"	86'–4"

CRITICAL DIMENSIONS

FRAME SPACING : 24" THROUGHOUT

△ LOCATION OF S.R.P. : 207.00 [FT] AFT OF F.P.

LENGTH BETWEEN PERPENDICULARS	195'–0"
LENGTH DESIGN LOAD WATERLINE	204'–0"
LENGTH OVERALL	226'–0"
BREADTH, MOLDED, AMIDSHIPS	42'–0"
DEPTH, MOLDED, TO MAIN DECK	20'–0"
FULL LOAD DISPLACEMENT	2,260 LTSW
GROSS TONNAGE	965 ABOUT

GENERAL NOTES

1. DRAFT MARKS : ARABIC NUMERALS REPRESENT CALCULATIVE DRAFT MARKS.
2. DIMENSIONS :
   - A. LONGITUDINAL LOCATIONS OF ALL ITEMS ARE GIVEN FROM THE STERN REFERENCE POINT (SRP) WHICH IS THE AFTERMOST POINT ON THE HULL AT THE CENTERLINE OF SHIP.
   - B. HEIGHTS OF ALL ITEMS ARE GIVEN FROM THE BOTTOM OF THE KEEL AMIDSHIPS EXTENDED.
   - C. LONGITUDINAL LOCATIONS AND VERTICAL HEIGHTS OF SIDE BLOCKS ARE FROM THE AFTER SIDE OF THE BLOCKS.
   - D. DIMENSIONS FOR SIDE / BILGE KEEL BLOCKS SHOWN IN TABLES ARE IN FEET, INCHES AND SIXTEENTHS.
3. BLOCKING : ARRANGEMENTS DEPICTED ON THIS PLAN REFLECT THE FOLLOWING DESIGN CONDITIONS.
   - A. DOCKING DISPLACEMENT OF 1,803.0 LONG TONS, 0.11 FT TRIM AFT AND ZERO HEEL.
   - B. KEEL BLOCKS DIMENSIONS ARE 30"(FORE / AFT)X 24" (ATHWARTSHIP) ON 6'–0" CENTERS, SUPPORTING 100% OF DOCKING DISPLACEMENT.
   - △△ C. SIDE / BILGE KEEL BLOCKS ARE 18" (FORE / AFT) X 30" (ATHWARTSHIP) ON 8'–0" CENTERS, SUPPORTING 10% OF DOCKING DISPLACEMENT PLUS OVERTURNING MOMENT GENERATED SEISMIC LOADING.
   - D. MAXIMUM BLOCK PRESSURE OF 370 PSI.
   - E. MINIMUM HEIGHT OF 5'–0" ABOVE DOCK FLOOR WILL BE MAINTAINED, WITH DIMENSION BEING TAKEN FROM BOTTOM OF KEEL AMIDSHIP.
   - F. SOFTWOOD CAPS, 2" MINIMUM THICKNESS, ARE REQUIRED FOR ALL BLOCKS.
   - G. DOCKMASTER SHALL BE RESPONSIBLE FOR DETERMINING BLOCKING ARRANGEMENT FOR ALTERNATE CONDITIONS, AND FOR PROVIDING ADDITIONAL BLOCKING OR SHORING WITH RESPECT TO SEISMIC AND / OR HURRICANE LOADS.
   - H. KEEL AND SIDE BLOCKS ARE NUMBERED FROM AFT TO FORWARD WITH THE AFTERMOST BLOCK IDENTIFIED AS BLOCK #1.
   - I. SIDE BLOCKS SHALL BE BUILT–UP AS INDICATED IN THE TYPICAL SECTIONS AND SHALL BE ADEQUATELY CRIBBED OR SHORED IN A FORE AND AFT DIRECTION TO PREVENT THE POSSIBILITY OF OVERTURNING THE BLOCKS.
   - △ J. DIRECTION OF BEVEL ON BLOCKS IN 18" IS INDICATED AS (–) FOR DOWN AND (+) FOR UP FROM THE HEIGHTS GIVEN OF THE AFTER SIDE OF THE BLOCKS IN THE TABLE OF OFFSETS.
   - △ K. OFFSETS PROVIDED FOR ADDITIONAL SIDE BLOCKS. BLOCKS TO BE UTILIZED AS PER MSCREP DIRECTION.
4. COMPLETE PAINTING OF THE UNDERWATER HULL :
   - A. IN ORDER TO CLEAN AND PAINT THE ENTIRE BOTTOM OF THE HULL IN TWO SUCCESSIVE DOCKINGS, THE FOLLOWING POSITIONS OF THE VESSEL, IDENTIFIED AS "A" AND "B" ARE NECESSARY.
   - B. POSITION "A": SRP (STERN REFERENCE POINT) IS PLACED 83'–4" AFT OF NO.1 SIDE BLOCK. SIDE BLOCKS FOR POSITION "A" ARE INDICATED UNDER PORT LONGITUDINAL BHD / GIRDER; STBD SIDE NOT SHOWN IS OPPOSITE. KEEL BLOCKS FOR POSITION "A" ARE AS SHOWN AND ARE LOCATED 27'–4" FWD OF SRP.
   - C. POSITION "B": SRP (STERN REFERENCE POINT) IS PLACED 86'–4" AFT OF NO.1 SIDE BLOCK. SIDE BLOCKS FOR POSITION "B" ARE INDICATED UNDER STBD LONGITUDINAL BHD / GIRDER; PORT SIDE NOT SHOWN IS OPPOSITE. KEEL BLOCKS FOR POSITION "B" ARE 30'–4" FWD OF SRP.

REVISIONS

REV	ZONE	DESCRIPTION	DATE	APVD
B		THIS REVISION DRAWING FROM COMSC DWG T–ATF171–085 6629779, REV–, AND SUPERSEDES BOTH DWG T–ATF171–085–6629779, REV –, AND T–ATF171–085	03/30/93	J.BOYCE MSCPAC N721
C	17–C 19–C 4–B	REVISED ORDER OF OFFSET POINTS FROM C–B–A TO C–A–B IN "FRAME 40" AND "FRAME 55" CHANGED DOCKING DRAFT FROM 18.34 FT TO 12.90 FT	12/6/94	J.BOYCE MSCPAC N721
D	4–C 4–F 6–F 9–C 9–F 8–C 24–C 24–E 2–A	1. MODIFY "BEARING ON BLOCKS" TABLE 2. MODIFY GENERAL NOTE 3(C) 3. MODIFY TABLE OF OFFSET FOR POSITIONS A & B 4. ADDED ADDITIONAL SIDE BLOCKS 5. MODIFY DIMENSIONS ON LIST OF OPENINGS IN SHELL BELOW DWL. ADDED SHELL PENETRATION NO. 25 THROUGH NO. 33 6. ADDED REV STATUS OF SHEETS	09/21/95	R.CHANG MSCPAC N721
E	4–C 7–G 9–G 17–B 19–B 24–C 24–E	INCREASED BILGE BLOCKS FROM 14"x28" TO 18"x30" ADDED KEEL BLOCKS #2 AND #26 REMOVED KEEL BLOCK #21 MODIFIED "BEARING ON BLOCKS" TABLE MODIFIED TABLE OF OFFSET FOR POSITIONS A & B	02/10/00	M.WOLF R.A.A. MSCHQ N721
F	4–E 6–H 8–H 9–C 24–C	MODIFIED BEVELING TO REFLECT 18" BILGE BLOCK MODIFIED BEVELING TO REFLECT 18" BLOCK DIMENSION MODIFIED BEVELING TO REFLECT 18" BLOCK DIMENSION MODIFIED LOCATION OF TWO OPENINGS MODIFIED LOCATION OF TWO OPENINGS	03/27/03	
G	7–G 9–G 4–C	MODIFIED TABLE OF OFFSETS TO REFLECT 18" X30" BLOCK SIZE MODIFIED BLOCK SIZE TO REFLECT 24" KEEL WIDTH	10/03	
H	7–G 10–G 9–D 7–F 3–D 7–E 8–C 9–F SH–2 SH–3	CORRECTED TABLE OF OFFSETS FOR SIDE BLOCKS. CORRECTED SRP LOCATIONS IN LIST OF OPENINGS BASED ON MEASUREMENTS TAKEN ON USNS SIOUX AT CASCADE GENERAL, PORTLAND OR, JANUARY 2009. REVISED DISTANCE FROM SRP TO FP. ADDED DATA FOR OPTIONAL SIDE BLOCKS UNDER CHINE. ADDED GENERAL NOTE 3.K FOR OPTIONAL SIDE BLOCKS UNDER CHINE. ADDED TABLE OF DRAFT MARK CORRECTIONS FROM SURVEY PERFORMED NOVEMBER 2005 AT TODD SHIPYARD, SEATTLE, WA. CORRECTED BEARING ON BLOCKS TABLE. CORRECTED HYDROSTATIC PROPERTIES. ADDED MISSING DIMENSIONS TO SECTION VIEWS, ADDED SECTION VIEW AT FR 83, CHANGED FR 21, 40, 55, AND 90 TO FR 19, 39, 53, AND 91. RE–PLOTTED ITEMS BASED ON AS MEASURED DISTANCES.	7/09	ROBELLEE

APPLICABLE SHIPS

NAME	NO.	DESIGN TYPE
USNS SIOUX	T–ATF–171	T–ATF–166

△△

3	2	1	SH	REV STATUS
H	H	H	REV.	OF SHEETS

NO.	PLAN NO.	TITLE
3	T–ATF 171–835–4842714	T/S BOOKLET FOR USNS SIOUX
2	T–ATF 166–845–4842709	T/S BOOKLET FOR USNS POWHATAN
1	T–ATF 166–802–6629426	DOCKING PLAN CALCULATIONS FOR USNS POWHATAN

REFERENCES

AMSEC LLC NAVAL ARCHITECTS & MARINE ENGR WASHINGTON, DC 20003 CAGE CODE 9F230			
		R. CHANG, N721	03–31–93
		PROJECT ENGINEER	DATE
		J. BOYCE, N721	03–31–93
		HEAD NAV ARCH BRANCH	DATE
		C. AZZARO, N72	03–31–93
		THIRTEEN TYCH DIV	DATE
DRAWN	DATE	L. DENISON, N74	03–31–93
CHECKED	DATE	DEPUTY ENGRG OFFICER	DATE
REVIEWED	DATE	APPROVED FOR COMMANDER MSC	DATE
APPROVED FOR AMSEC LLC	DATE		

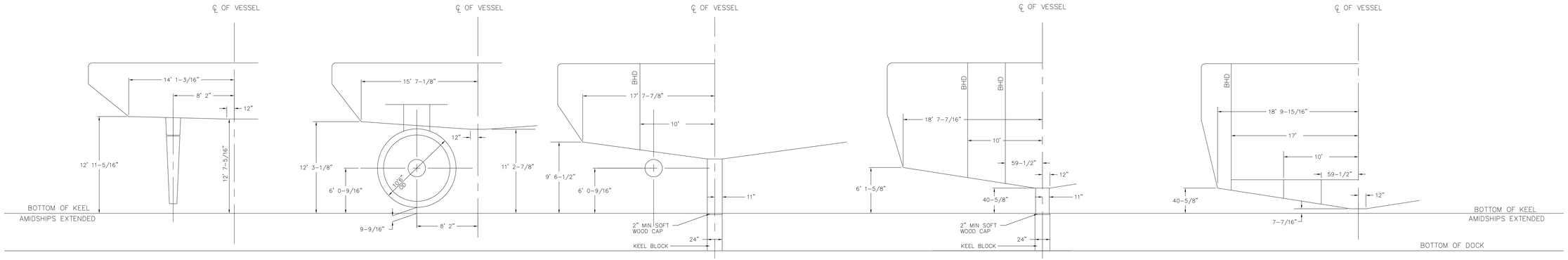
DEPARTMENT OF THE NAVY
MILITARY SEALIFT COMMAND
WASHINGTON D.C. 20398

DOCKING PLAN (NORMAL) FOR USNS SIOUX T–ATF–171

SIZE	CAGE CODE	MSC DRAWING NO.	REV.
H	94421	085–4839510	H

SCALE: | SHEET 1 OF 3

085–4839510 SH 1 REV H



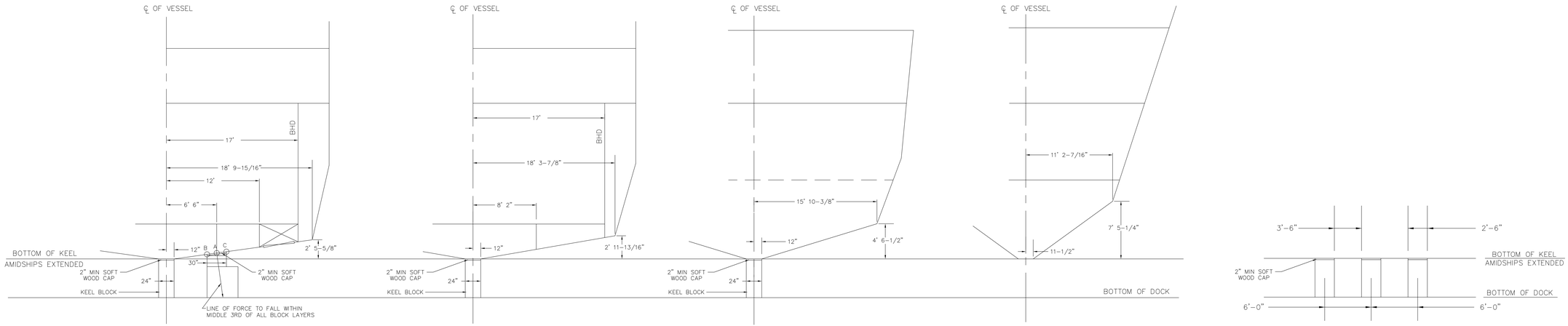
FRAME 104 ⚠
WT BHD
LOOKING AFT

FRAME 100 ⚠
NT BHD
LOOKING AFT

FRAME 91 ⚠
OT BHD
LOOKING AFT

FRAME 83 ⚠
NT BHD
LOOKING AFT

FRAME 75 ⚠
OT BHD
LOOKING AFT



FRAME 53 ⚠
OT BHD
LOOKING FWD

FRAME 39 ⚠
OT BHD
LOOKING FWD

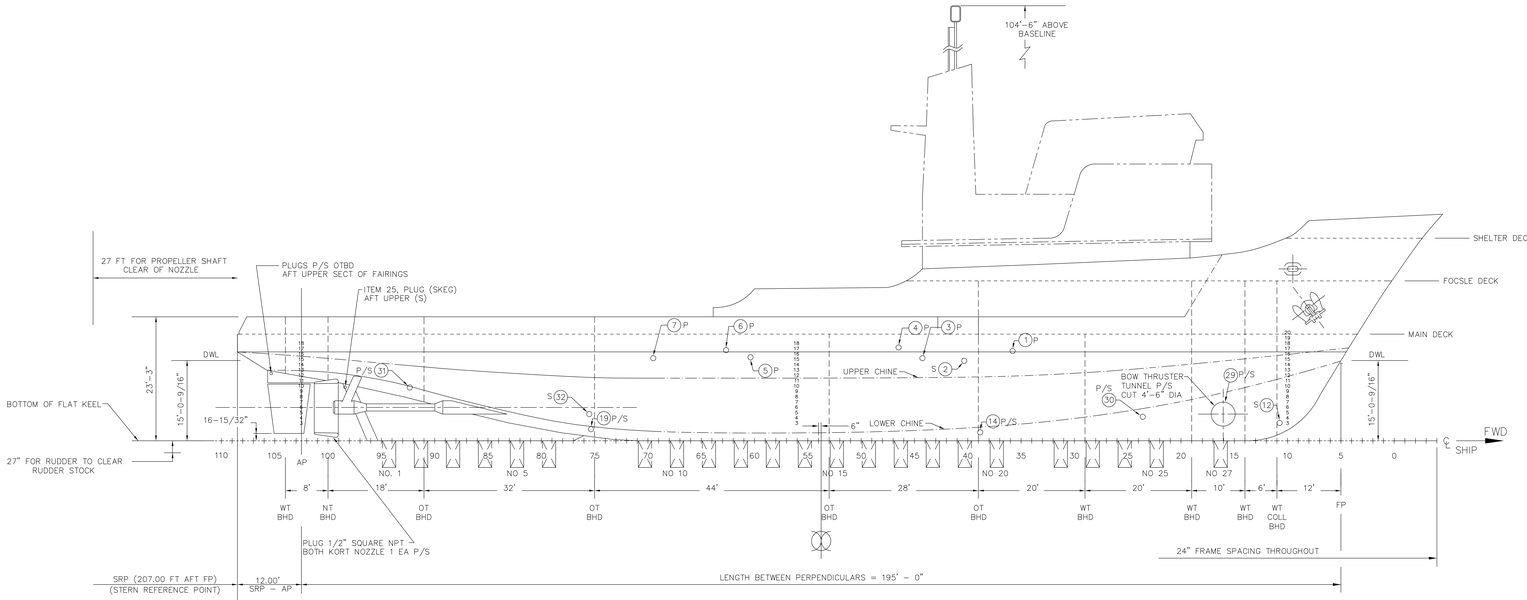
FRAME 29 ⚠
WT BHD
LOOKING FWD

FRAME 19 ⚠
WT BHD
LOOKING FWD

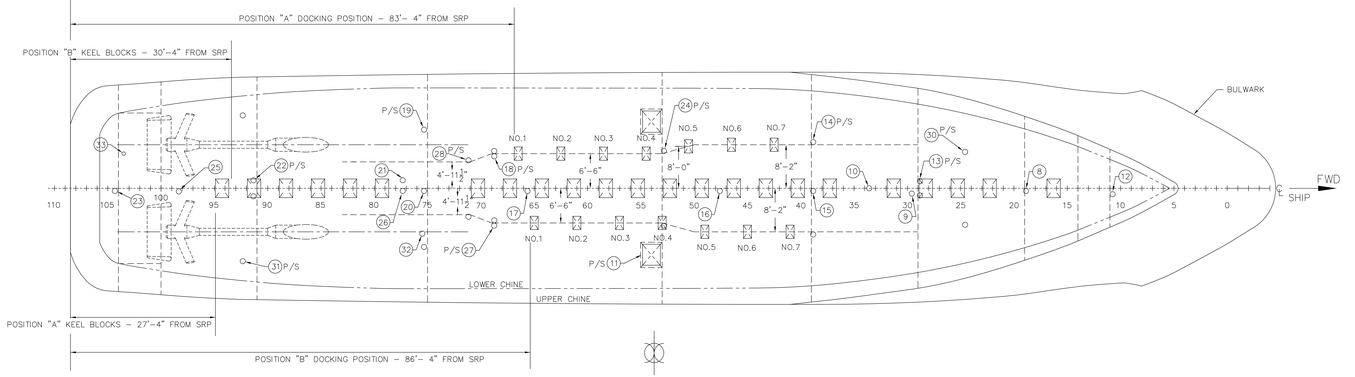
SIDE ELEVATION OF KEEL BLOCKS
SHOWING SPACING

	SIZE	CAGE CODE	MSC DRAWING NO.	REV.
DRAWN	H	94421	085-4839510	H
ISSUED	SCALE: 1/4" = 1'-0"		SHEET 2 OF 3	

085-4839510 SH 2 REV B



PROFILE



BOTTOM PLAN

	SIZE	FSCM NO	DWG NO	REV
DRAWN	H	94421	085-4839510	H
ISSUED	SCALE: 1/8"=1'-0"		SHEET 3 OF 3	

085-4839510 SH 3 H REV H